APPENDIX F

LAKEBELT ISSUE ADVISORY TEAM REPORT TO THE WORKING GROUP

LAKE BELT ALTERNATIVES

FINAL REPORT

by

Lake Belt Working Group Issue Advisory Team

with support from

Planning and Management Consultants, Ltd.

A Report Submitted to:

South Florida Ecosystem Restoration Working Group

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LAKE BELT ISSUE ADVISORY TEAM REPORT TO THE WORKING GROUP

This report presents the results of the Lake Belt Working Group Issue Advisory Team, which met in six working meetings from January 17, 1997 through April 25, 1997. This report is organized around four general topics: (1) Issue Advisory Team purpose and composition, (2) what the report provides, (3) how the recommendations were developed, and (4) recommendations. The information in this report is presented in question and answer format in anticipation of the questions that would be asked of the Lake Belt Issue Advisory Team. While there is some reference to other sections of the report, an attempt was made to answer each question fully.

ISSUE ADVISORY TEAM PURPOSE AND COMPOSITION

Why was this Issue Advisory Team formed?

The Issue Advisory Team, formed under the interagency South Florida Ecosystem Restoration Working Group (Working Group), was commissioned to address the specific interests in the Lake Belt study area in support of a Programmatic Environmental Impact Statement (PEIS) in response to a proposal for a Department of the Army Section 404 Permit for rock mining in the region. The region is of significant importance to rock mining interests, environmental agencies and groups, landowners, and water resource agencies. This region is a primary area for rock mining in the state of Florida–a critical component to infrastructure and growth in the state. Well fields that supply drinking water to the nearby urban coast (e.g., Miami) are an important resource feature of the Lake Belt region. To the west of the Lake Belt region is the Everglades, a critical environmental resource of national and international significance.

The purpose of the Issue Advisory Team was to develop alternatives that would balance these important issues and that would guide the subsequent planning and regulatory actions. The formal purpose which guided the Team was:

> *To analyze a set of alternatives and recommend a preferred alternative that balances public need for construction aggregate, cement, and road base materials with: (1) environmental restoration goals for the Everglades, (2) regional water management goals and, (3) achieving a "no net loss" of wetland functions from mining activities.*

Recommendations in support of this purpose will go forward to the Working Group and will reduce uncertainty regarding land use and resource management decisions in the region. This information is especially critical to future restoration and mining initiatives. Without this analysis the decisions regarding permitting and restoration activities would continue in a case-by-case manner. This "piece-meal" approach is viewed by most involved as inefficient and time-consuming (both economically and

environmentally). In addition, this approach may lead to missed opportunities to provide the best balance of mining, environmental restoration, and regional water management and supply in the area.

What is the purpose of this report?

This report documents the activities and recommendations of the Issue Advisory Team. The analysis and evaluation of the range of alternatives considered are described, leading to the recommended alternative. The report is designed to be passed on to the Working Group as originally tasked.

Further, the report is written so that others outside the Working Group can understand the purpose, activities, evaluation process, and logic behind the final recommendations. This is important because there are many interrelated environmental and development initiatives being considered in the Lake Belt and proximate areas.

While this report summarizes the key activities of the Issue Advisory Team, it should be noted that a significant amount of supplemental information was either initiated or developed for the Issue Advisory Team activities. This information is listed in order of presentation in Attachment A and is on file at the Corps of Engineers Jacksonville District office.

What were the goals/objectives of the Issue Advisory Team?

Seven points of guidance were given to the Issue Advisory Team that were to be used in considering the alternatives developed in this process. These points were to address/determine:

(1) an appropriate level of compensatory mitigation that will be required to offset loss of wetland functions and values resulting from mining, including consideration of a user fee to accomplish the mitigation;

(2) project features to manage seepage and offset any increase of seepage due to mining (e.g., water management through step-down measures, subterranean seepage barriers);

(3) any secondary impacts within WCA-3B, Everglades National Park, and the Pennsuco wetlands as a result of increased seepage resulting from additional rock mining activities;

(4) any upstream and downstream effects of seepage control measures (e.g., increased salt water intrusion, salinity changes in Biscayne Bay, effects to well fields, etc.);

(5) means to increase rock mining tonnage within the existing mined areas (e.g., remove Section roads, remove existing littoral shelves, reopen old shallow pits, etc.);

(6) means to improve water management (e.g., urban water supply, storage, water quality treatment) within northwest Dade County (i.e., utilize the rock pits, above ground impoundments, backpumping, etc.); and

(7) water quality issues related to backpumping (e.g., well field impacts and use of this water for natural system needs).

These points of guidance and the purpose statement, presented earlier, led to the need for bringing the affected groups and agencies together in a forum in an attempt to reach consensus on these and other associated issues. The composition of the Issue Advisory Team and the process used to reach consensus are presented later in this report. The Issue Advisory Team addressed each of the points in various capacities. Many of the points were discussed fully and included as factors in the analysis of alternatives. Other points received basic discussion and were deemed by the Issue Advisory Team as needing further analysis by the Working Group.

Who participated on the Issue Advisory Team?

Given the goal of developing consensus-based alternatives for the Lake Belt region, membership was sought of those with expertise and stake in the study area. The Issue Advisory Team was comprised of representatives from federal, state, and county agencies; rock mining interests; environmental interests; and private landowners. This effort was widely advertised and members were taken on a volunteer basis. Announcements were made to the public of the original meeting schedule in early January 1997.

The initial composition of the Issue Advisory Team included some members from the Working Group. While a core set of individuals and agencies formed the Issue Advisory Team, all visitors were welcome to attend the meetings and were invited to participate in the discussions and other activities that occurred during these meetings. Nearly all of the members of the Issue Advisory Team attended each meeting and participated fully in meeting the group's goal. The participants and their affiliations are presented in Attachment B.

WHAT THE REPORT PROVIDES

How will this report be used?

This report will be used in planning and regulatory processes required for future rock mining and Everglades restoration activities. The evaluated alternatives will be the basis for the alternative analysis portion of a PEIS being developed for the study area. This report identifies future mining and mitigation areas; integrates the mining with Everglades restoration activities, such as the Central and

Southern Florida (C&SF) Project Comprehensive Review Study (Restudy); and protects and enhances municipal and industrial water supplies for the region.

This report will be used in completing the PEIS which could be adopted as the basis for developing a master plan to set future land, infrastructure, and recreational use within the area. This report identifies where future rock mining can occur, which will provide the miners with certainty of future minable resources for making long-term financial decisions.

The PEIS will include appropriate wetland and hydrologic mitigation. The plan developed in the PEIS will include a mitigation element that offsets both the direct wetland impacts and the hydrologic impacts of limestone mining activities. These mitigation features will be used in subsequent federal and state regulatory permitting application evaluations for rock mining in this region. This PEIS plan may eventually lead to issuance of a General or Standard Permit under Section 404 of the Clean Water Act.

The finalization and agreement by all parties to the final PEIS will hopefully serve to further the efforts of the Lake Belt Committee to complete Phase I of the state legislative directive to develop a comprehensive plan for this region. The next step of the Lake Belt Committee will be the development of Phase II of the Lake Belt plan to further address land use compatibility and conflicts, and additional well field protection measures. The detailed comprehensive plan, if adopted by the Metropolitan Dade County Board of County Commissioners, could serve as the basis for Dade County's Comprehensive Development Master Plan for this region.

This report will serve as a baseline from which alternative plans for the C&SF Restudy will be formulated and evaluated. The Northwest Dade County mining region has long been identified as an element of the Water Preserve Areas (WPAs) which compose a major component of the Restudy. As a component of the WPAs, it has been accepted that water resource projects would be implemented within this area in some combination with limestone extraction. These water resources projects, implemented through the Restudy, are intended to provide additional clean water for urban water supply and to the Everglades for the purpose of hydropattern restoration and urban water supply. However, to formulate and evaluate alternative project features for the Restudy, the most likely future land-use conditions need to be established. This will ensure that federal and state funds are not being used to mitigate impacts that result from limestone extraction.

The report will also identify areas that may be needed to support Everglades restoration. These areas will be used during the Restudy as a regional component of the C&SF Comprehensive Plan. The areas will form a base condition for ecosystem restoration in this region. From this base condition, other comprehensive ecosystem restoration features will be developed and implemented to achieve the long-term restoration goals for the Everglades.

What is the geographic scope of the report?

The Lake Belt study area is located in southeast Florida, in the northwest area of Dade County as presented in Figure 1. The area is generally bounded by the Everglades and Krome Avenue to the west, the Florida Turnpike to the east, the Dade-Broward County line to the north, and Kendall Drive to the south. The study area encompasses approximately 57,000 acres.

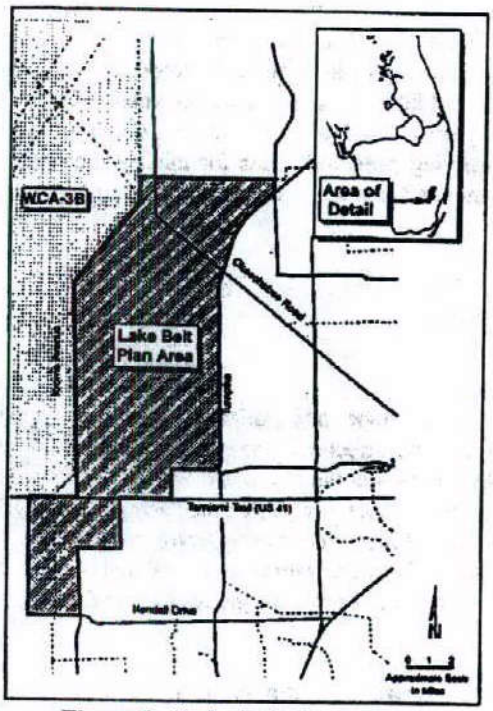


Figure 1. Lake Belt Study Area

While the alternatives are generally limited to the immediate study area, the effects or impacts of the alternatives will be felt throughout Florida. The significance of the Everglades as a natural wetland system, and the need for its restoration, is nationally and internationally recognized. Additionally, the long-term need for potable water in any urban and industrialized area of the world is understood by every man, woman, and child. While south Florida has enjoyed many years of seemingly unlimited fresh water, it is now feeling the threat of future water shortages. While limestone extraction is not as intuitive as water or energy, removal of a nonrenewable resource from the earth is needed to support the massive infrastructure development throughout Florida. Mining of these limestone deposits is a vital activity to support the economy of south Florida.

How does this report relate to the report dated February 1997 by the Northwest Dade County Freshwater Lake Belt Plan Implementation Committee?

The Northwest Dade County Freshwater Lake Belt Plan Committee was created by the Florida legislature which directed it to develop a plan that enhances water supply for the Everglades and Dade County while maximizing efficient recovery of limestone, promoting the social and economic welfare of the community, and protecting the environment. In February 1997, the Committee released a report to the Florida Legislature recommending a phased implementation approach. Phase 1 provides the framework of the plan (identification of mining and mitigation lands) and recommendations for legislative and regulatory actions. The subsequent phase will include development of a master plan.

Corresponding with this effort, the state and federal governments have other planning and regulatory decisions pending for this region including: (1) the Comprehensive Review of the C&SF Project being conducted jointly between the U.S. Army Corps of Engineers and the South Florida Water Management District and (2) the preparation of an EIS on continued mining in the Lake Belt study area. These other efforts require identification of alternatives for water storage and rock mining in this region. These alternatives must address not only the anticipated future land uses but the corresponding hydrologic and ecologic modifications including creation of reservoirs, water quality treatment facilities, seepage management controls, and features to restore ecologic values within the Everglades. The Northwest Dade County Freshwater Lake Plan has accomplished its first phase by identifying potential areas for mining and mitigation. This effort and subsequent regulatory and planning efforts will continue to build upon the Northwest Dade County Freshwater Lake Plan.

How does this report relate with ongoing federal and state Everglades restoration activities?

A number of significant projects are currently underway to restore the Everglades ecosystem that may be affected by the results presented in this report. Activities in the Lake Belt region may potentially affect the ability of these other on-going projects to achieve their intended benefits. The alternatives must ensure that the mining activity will not compromise these restoration efforts and that the federal investment in hydrological improvements through these projects are not compromised. Of particular importance are the Water Preserve Areas/East Coast Buffer project and the Modified Water Deliveries to Everglades National Park project.

DEVELOPMENT OF ALTERNATIVES

How did the Issue Advisory Team make decisions?

The Issue Advisory Team was assembled to make a consensus-based recommendation for balancing mining activities against other public interests (e.g., environmental protection, water supply). This required bringing together stakeholders with diverse perspectives regarding what the desired results should be for the study area. Each person was given a forum where they could have a voice in the development and recommendation of the final alternative. The planning process employed was founded on the participants' willingness to participate fully and honestly, and to work toward a reasonable, justifiable, and feasible balance between the range of perspectives represented in the study area.

Majority rules-voting was not the desired approach for making decisions as the Issue Advisory Team did not have equal representation from each stakeholder group. The goal was to utilize the expertise and creativity at the table to develop general agreement (consensus) on land use for the

study area. Frequent signs of approval were asked of the Issue Advisory Team at increments of progress to ensure the group was moving in a consensus-based direction. Anyone having significant problems with a particular point was given the opportunity to stop the group and share their concerns. The Issue Advisory Team was committed to adequately accommodating these perspectives so that consensus could be reached. In cases where positions of Issue Advisory Team members could not be adequately accommodated in what appeared to be the consensus direction of the group, the concerns and/or issues of those opposed to a decision were registered in the meeting notes and in this report in two places: (1) where the decision is recorded and (2) in the section discussing caveats and minority opinions.

What planning process did the team use?

Over the course of the six meetings the Issue Advisory Team generally followed the process shown in Figure 2. This process involved (1) generating factors for evaluating the alternatives, (2) generating alternatives for consideration, (3) evaluating the generated alternatives, and (4) making recommendations based on the evaluation process. Although the figure indicates a linear process, it was highly iterative and required revisitation of steps. The sequencing of the meetings with two week interim periods served the process very effectively, allowing for certain issues to be reflected upon between meetings and resurrected, validated, or adjusted.

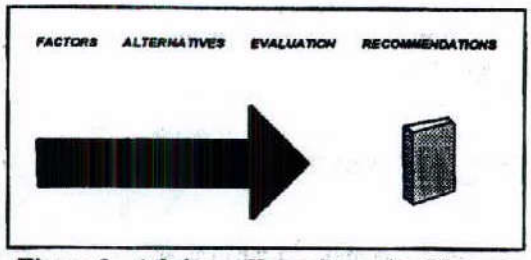


Figure 2. Advisory Team Planning Process

Factors Created. To ensure that the evaluation of the alternatives reflected everyone's concerns, the Issue Advisory Team members were asked to generate a list of their respective wants. These wants were examined for commonality and used to develop a set of key factors for the evaluation of the alternatives. Data sources and forms of measurement were identified for each of the factors that were used to describe each of the alternatives systematically and to facilitate the comparison and fine-tuning of alternatives.

Alternatives Created. Alternatives were generated through a mapping exercise conducted in three steps. The first step was the creation of individual maps that reflected each Issue Advisory Team member's perspective of land uses and hydrologic approaches to address the many interests being considered. In the second step, these maps were reviewed in breakout groups to identify areas of commonality. These areas of commonality were mapped by breakout group and then combined. The third step was to generate alternative maps by forming breakout groups to identify options for the areas where agreement was not reached.

Evaluation. Evaluation of the alternatives was also achieved using a three-step approach. In the first step Team members were arranged into factor specialty teams, according to expertise and

interest, to evaluate alternatives for those specific factors. Step two was the presentation of results by each factor specialty team to the entire Issue Advisory Team. Participants were allowed to ask questions for clarification, not to challenge the results at that point, but to basically be briefed on the impacts according to each factor. The third step was an open discussion of the results in order to reach consensus on a preferred alternative which was done either in breakout groups or as a whole. This component of the process was altered in that the Advisory Team chose to examine alternatives for the study area based on three geographical sections: (1) the northern section, (2) the middle section, (3) and the southern section.

Recommended Alternative. Identification of the alternative for recommendation is partially connected to the evaluation component of this process. However, this component was included as a means for verification of the final recommendation and for identification of any outstanding issues that should be considered by the Working Group. Again, if any of the participants had a concern regarding the final recommendation, they could stop the process to discuss it. A recommended alternative was developed for each of the sections (Northern, Middle, Southern) and then the Lake Belt region was examined in its entirety to ensure that the systemic issues were addressed appropriately.

What factors and constraints were considered?

In preparation for the evaluation of alternatives, the Issue Advisory Team developed a set of factors that were used to compare the proposed alternatives with the goal of identifying a recommended alternative. The factors reflected the range of perspectives and positions represented on the Issue Advisory Team. Not everyone at the table agreed to the magnitude of importance of the factors–that was left for subsequent analysis. However, everyone agreed that these should at least be considered and made part of the evaluation that would guide the analysis of alternatives. This not only served as a utility to the analysis but also surfaced explicit recognition of the factors by everyone on the Issue Advisory Team.

At the first meeting the Issue Advisory Team members were asked to generate a list of what they wanted from the project. These wants represented anything that participants felt were important outcomes or issues that should be addressed in the analysis of alternatives. Everyone had an opportunity to offer their list of wants and provide explanation as needed. These were not contested by other members of the group, as they simply represented the perspective of everyone on the Issue Advisory Team and would be considered by the entire group.

The wants were processed and organized by reducing redundancy and seeking further clarification. Further discussion by the Issue Advisory Team created a final set of eleven factors that could be used for evaluating the alternatives generated in this process. The Issue Advisory Team reflected on the factors and assessed them in relation to the formal purpose/charge of the Issue Advisory Team. To this end, the Issue Advisory Team endorsed the eleven factors to be used in the evaluation of alternatives. These factors are presented in Table 1.

TABLE 1
FACTORS AND MEASURES FOR EVALUATING ALTERNATIVES

FACTOR	MEASURES
Water Quality	* High-Medium-Low Impact of Alternatives on Water Quality
Quantity of Rock	* Amount of rock in years, tons, and acres
Support Everglades Restoration	* Increased spatial extent of conserved and restored natural areas * Enhance hydropatterns in WCA-3B and Everglades National Park * Enhance ecological connectivity
Estuaries/Bays (Biscayne Bay)	* Reduction of large pulses of stormwater to Biscayne Bay * Provide baseflow during the dry season
Net Effects of Mining on Wetland Functions	* Effects on system functions and mitigation of system functions
Economic Impacts	* Costs for implementation * Effects on Florida economy * Competitive analysis of alternative rock sources * Economic impact analysis of each alternative
Public Interest/Aesthetics/Quality of Life	* Effects on recreation * Aesthetics * Impacts of blasting on Safety * Sense of Community/Culture
Water Supply	* Ability to increase future water supply * Less demand on regional system * Meets existing water supply
Flood Protection	* Maintains existing flood protection * Improves flood protection
Management Flexibility	* Yes/No/Neutral scale regarding management flexibility of other factors
Existing Land Uses other than Mining	*Those for Flood Protection and Water Supply * Potential for private property to contaminate * Degree of reduction of uncertainty in land use

Selected Issue Advisory Team members were tasked with identifying information that could be used to support the factors related to their area of expertise. These members were also asked to determine measures that would be useful for examining alternatives. The resulting measures were both qualitative and quantitative in nature and are summarized in the second column of Table 1. The Issue Advisory Team recognized that, due to the short time frame for determining a recommendation, professional judgment would be relied on heavily in the evaluation. This would, in turn, entail the development of qualitative descriptions because of the increased potential for subjectivity in the analysis and the need for explanation to other readers. Consequently, most of the measures were scaled using a low-medium-high approach with regard to how favorable its impact was on a particular factor. The definitions for each scaling are presented under the evaluation of alternatives.

The examination and discussion of the factor analysis was to be supported primarily by existing information and professional judgment. Data pertaining to hydrology, water quality, and engineering models, while considered valuable, were impossible to develop given the Issue Advisory Team's three month schedule. However, there were times when the group felt it necessary to get empirical support for selected alternatives. In these cases some members of the Issue Advisory Team were called upon to conduct modeling for the area in question. Although there was still some

uncertainty, these short-term modeling efforts were used by the Issue Advisory Team for determining the results of the factor analysis.

ISSUE ADVISORY TEAM RESULTS AND RECOMMENDATIONS

What are the alternatives?

Keeping with the goal of reaching a consensus-based recommendation, the generation of alternatives was based on merging the individual perspectives of the Issue Advisory Team members. Accordingly, the Issue Advisory Team started by creating a wide range of alternatives and moved toward a smaller set that accommodated the range of participant perspectives. First, Issue Advisory Team members were asked to create a map depicting where mining, water management, and environmental lands should be located. The common attributes of these maps were combined to produce the initial consensus map presented in Figure 3. It should be noted that these maps are not precise delineations of land uses. They were developed to identify approximations for use by the Working Group.

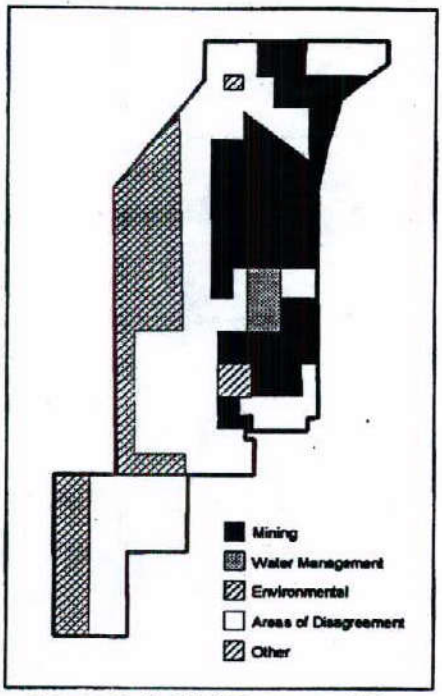


Figure 3. Initial Consensus Map

This initial "consensus" map was distributed to the Issue Advisory Team a second time for another attempt at developing a map displaying their desired land and hydrologic uses. This round of map generation led to the development of 12 alternatives supporting variable mixes of plan objectives.

It should be noted that there are "nicknames" used in this report that reference specific regions of the Lake Belt. As a means of clarification for the reader, these nicknames have been identified on the Lake Belt map in Figure 4.

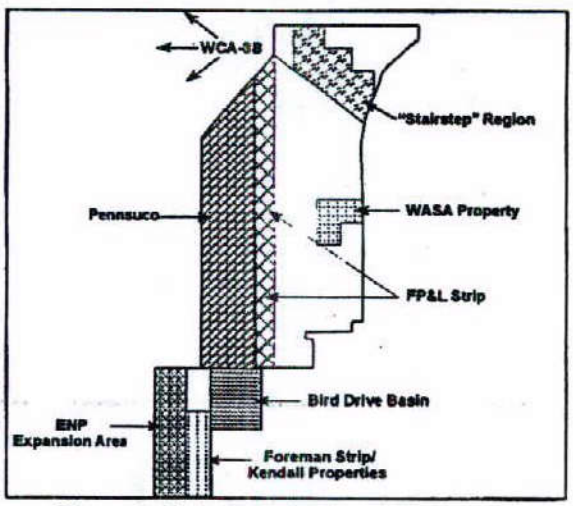


Figure 4. Lake Belt Regional Nicknames

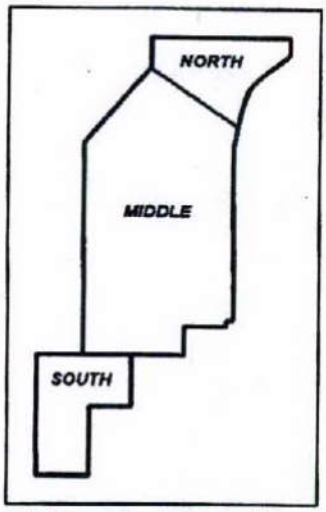


Figure 5. Alternative Index Map

Discussion by the Issue Advisory Team suggested that alternatives for the study area should be examined in three sections, using canals as the geographical means for separation. Hydrologists in the group identified three sections they believed were, in general, hydrologically separable. These sections also had unique issues requiring discussion, including private property issues in the north, land swap deals in the middle, and Everglades National Park restoration efforts in the south. This agreement resulted in the creation of the alternative index map shown in Figure 5 that presents the three sections.

There were distinct differences in how the breakout groups constructed their respective alternative maps. Some groups focused strictly on land uses, while others incorporated more hydrologic and engineering features. These differences in mapping led to the need for the Issue Advisory Team's hydrologists to determine general hydrologic engineering features for each alternative. The development of alternatives was also aided by a map brought by a representative of the mining interests that identified land in ownership by the miners as well as other existing structures in the study area.

A collapsing of the twelve alternative maps developed by the Issue Advisory Team led to eleven sectional alternatives being carried forward for analysis: two for the northern section, five for the middle section, and four for the southern section. These alternatives are presented, by section, below.

Northern Section. Two alternatives, N1 and N2, were carried forward for the northern section and are shown in Figure 6. The N1 alternative maintains a large area of land, which resembles a "stairstep" along the northern border of the C-6 canal, for other existing land uses. It also designates the northeast area of this section for both mining and water management. Most of the western edge is designated for water management because of the potential for increased seepage if it were to be designated for mining. Possible hydrologic features include structures in the C-6 and C-9 canals, backpumping of C-9 water to lakes for storage, backpumping to WCA-3B, and allowing for secondary drainage in agricultural and residential areas.

N2 is more mining-intensive by including the "stairstep" as available for mining, but it sets the northwest and northeast areas aside for environmental purposes. Back-pumping is suggested for the northeast corner. The other hydrologic features for N2 include backpumping to lakes for storage and to WCA-3B and placement of structures in the C-6 and C-9 canals.

Middle Section. Five alternatives were examined for the Middle Section: M1, M2, M3, M4, and M5. These alternatives are presented in Figure 7. The M1 approach emphasizes a 50-50 split of the FP&L strip, with half of it being mined and the other half being preserved for environmental concerns. The M2 alternative allows for extensive mining in the Middle Section east of the Pennsuco. This alternative includes the use of small pumps along the Dade/Broward Levee, pumping water from

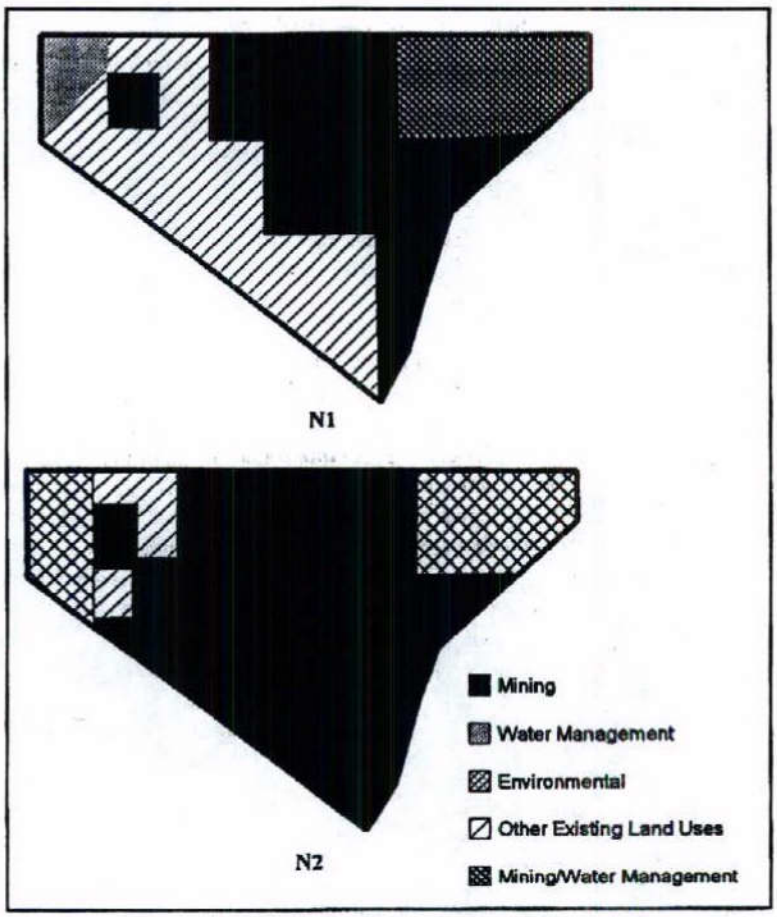


Figure 6. Initial Northern Section Alternatives

lakes through a portion of the existing well field canal to L-30, and structures placed in the C-4 and C-6 canals. Additional options for this alternative include pumping to WCA-3B, the use of a curtain wall to manage seepage, and backpumping treated water from the C-4 and C-6 canals. Alternative M3 maintains most of the mining designations as M2, but it includes a corridor for wildlife passage between the Pennsuco and the northern well field.

Alternative M4 is the most mining restrictive of the alternatives being considered for the Middle Section. It suggests maintaining most of the FP&L strip for environmental concerns. The M4 alternative includes many of the M3 options, including canal structures and backpumping. However, it also suggests placing a levee running north to south that would be west of the FP&L strip. M5 is the most expansive approach to mining in the Middle Section. This is because it identifies opportunities for mining in the Pennsuco.

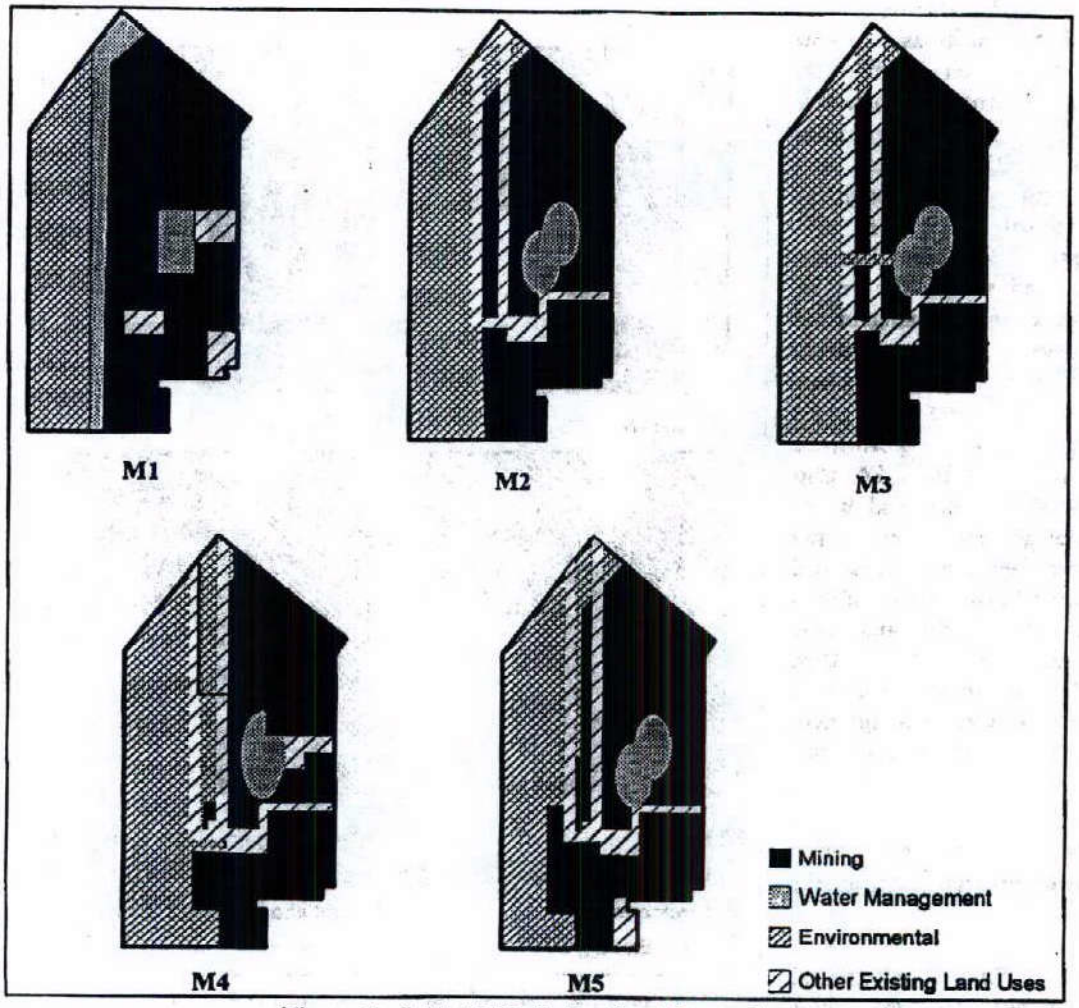


Figure 7. Initial Middle Section Alternatives

Southern Section. Four alternatives were reviewed for the southern section: S1, S2, S3, and S4. These alternatives are presented in Figure 8. Primary hydrologic and engineering features that were considered with the alternatives included a structure on L-31N Levee and pumping from the canal to ENP. Seepage analysis shows a high rate of seepage at the north end of the canal. Various options to address seepage were considered in the discussion. The S1 alternative recommends mining the Foreman strip. It designates the Northwest Bird Drive Basin as a set-aside for both environment and water management. Land west of the L-31N Levee is left for environmental concerns. S2 also suggests mining in the Foreman strip, but it includes a buffer strip between the mining area and the environmental component. S2 also includes placing a structure on the L-31N Levee and the potential for pumping to the Everglades National Park.

S3 treats the Foreman strip as a 50-50 split between mining and environmental concerns. Placement of a structure in the L-31N Levee and pumping to Everglades National Park are also options for S3. The S4 alternative is the most restrictive of mining in the Foreman strip, limiting mining activity to nonjurisdictional areas and some previously permitted wetland areas. S4 also includes mining and water management in the northwest area of the Bird Drive Basin. Strips of land on the south and east edges of the Bird Drive Basin are designated for both water management and environmental concerns.

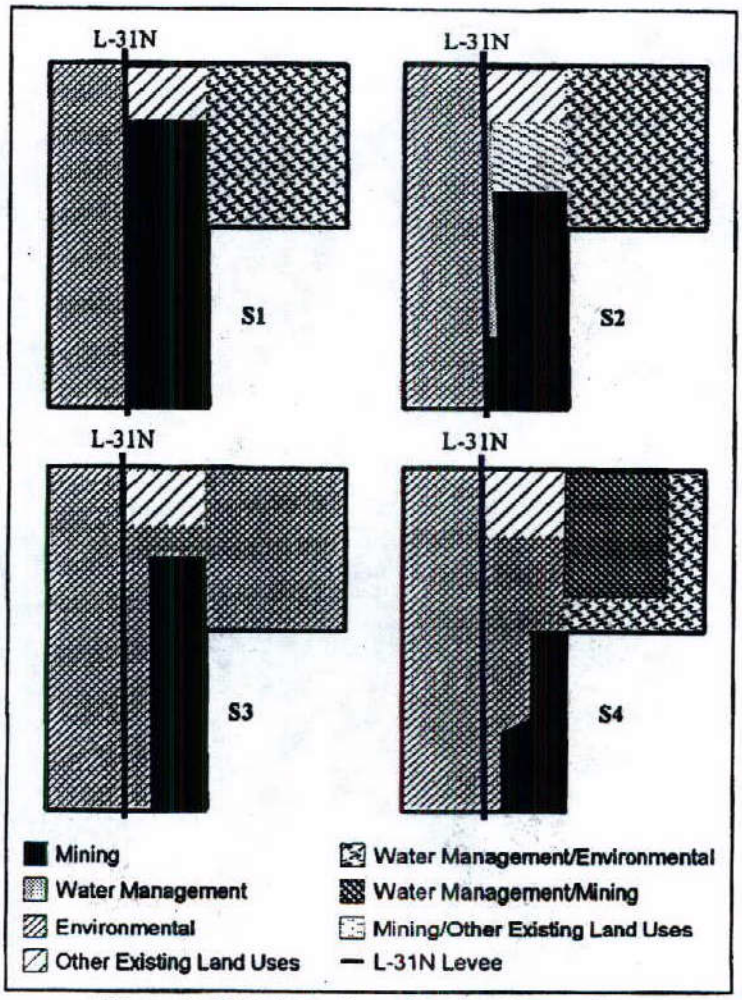


Figure 8. Initial Southern Section Alternatives

How were the alternatives evaluated?

Each alternative identified for the three sections, North, Middle, and South, were evaluated according to the factors developed by the Issue Advisory Team early in the process (see Table 1). The factor analysis for each alternative was, in most cases, qualitative and was used more to guide the discussions versus lead to the determination of a recommended alternative. The factor analysis imposed structure to the discussion addressing the issues deemed most important by the Issue Advisory Team. It led to a further filtering of alternatives and the development of a hybrid alternative that captured the key features discussed by the Issue Advisory Team. Subjectivity was inherent to the analysis, especially in review of the factors. While this approach appeared to provide adequate results in selecting an alternative, precision in the analysis was sacrificed. It was apparent from the discussions that factors were not valued equally. The Issue Advisory Team did not assign a numerical score to the factors. This mode of decision-making concerned some members of

the Issue Advisory Team, but most were comfortable recognizing the time constraints and that this was in the early stages of a multi-phase process.

Alternatives for the North, Middle, and Southern Sections described above were examined section by section in seeking a preferred consensus alternative for each. The approach and evaluation of each of the alternatives are described below. The final recommendation is a composite of the three component recommendations. Accordingly, the presentation of results below begin with the evaluation, discussion, and recommendation for the three components and conclude with the discussion regarding the Issue Advisory Team's attempt at a consensus-based recommendation.

Northern Section. The northern section examined two alternatives, N1 and N2. The primary difference between these alternatives was the treatment of land uses other than rock mining. The first alternative assumed maintenance of current land uses in the form of ranchettes, tree nurseries, and other existing uses and the second assumed rock mining throughout most of the C-9 basin. The results of the factor analysis are presented in Table 2. The analysis results are presented using a high-medium-low scale. Some use a +/- system indicating more (+) or less (-) favorable. The results of the factor analysis are summarized here, with ratings for each factor presented in *italics*.

TABLE 2
SUMMARY OF FACTOR ANALYSIS FOR NORTHERN SECTION*

Factor	N1	N2
Water Quality	M	H
Quantity of Rock	M	H
Support Everglades Restoration	M	H
Estuaries / Bays	H	H
Net Effects of Mining on Wetland Functions	M	H
Economic Impacts	M	M
Public Interest / QOL / Aesthetics	H	M
Water Supply	M	H
Flood Protection	H(+)	H
Management Flexibility	M	M(+)
Existing Land Uses Other than Mining	H	L

*L = low; M = medium; H = high

Water Quality. The first factor considered was Water Quality. The factor specialty group for water quality determined that alternative N1 would have a *medium* effect on water quality because of the potential for pollution from runoff and septic leachate associated with land uses other than mining. The N2 alternative would have a *high* effect on maintaining water quality because of the absence of other land uses. (*high* was cited as improving water quality; *medium* a maintenance of status quo; and *low* as worsening water quality.)

Quantity of Rock. The N1 alternative was rated as a *medium* status for rock mining and the N2 as a *high* status (*high* being cited as most desirable for rock mining). This was because the N2 alternative allowed for more mining options in the C-9 area.

Support Everglades Restoration. N1 was rated as *medium* status for support of Everglades restoration and N2 as *high* (*high* being recognized as the most desirable for ecosystem restoration). The driving measure in making this decision was that N2 is better for enhancing the hydropatterns in WCA-3B and in Everglades National Park because the need for providing flood

protection for other uses in the "stairstep" area was eliminated. No distinguishable differences were identified for the measures Increase Spatial Extent and Enhance Connectivity. In general, the Hydrology Factor Specialty Group was uncertain of what to do in evaluating the C-9 basin/northern areas for this factor because there was little "green" designated in the area.

Estuaries/Bays (Biscayne Bay). Both N1 and N2 received *high* ratings regarding their effects on estuaries/bays, but N2 was seen as slightly better in reducing pulses to Biscayne Bay due to more backpumping options (*high* being most desirable for improving estuary/bay conditions). Also, there were some concerns about flood control for the lands presented in the N1 alternative. No distinguishable differences were identified for the measure Provide Baseflow During Dry Season.

Net Effects of Mining on Wetland Functions. N2 was rated as *high* and N1 as *medium* regarding the Net Effects of Mining on Wetland Functions (*high* being most desirable for maintaining wetlands). Although the wetland values are minimal in the C-9 area, the N2 option would provide opportunities for regional mitigation elsewhere. N1 provides no opportunities for the regional scale mitigation that the N2 approach affords.

Economic Impacts. Economic Impacts (examined in terms of benefits) for both N1 and N2 rated as *medium* (*high* being recognized as greatest contribution to the economy). Three measures were examined in this determination. For the measure Minimize Land Acquisitions, N1 was rated *high* and N2 *low*, because very little land would need to be purchased under N1. For the measure Minimize Flood Protection Needs, N1 was rated *low* and N2 *medium*. N1 would have a high cost affiliated with flood protection needs and N2 would still require some adjustments for flood protection. For the measure Effects on the Florida Economy, N1 was rated *medium* and N2 as *high*. N2 provided better opportunities for construction associated with local rock (Competitive Analysis of Alternative Sources/Economic Analysis for Housing) and effects on the infrastructure.

Public Interest/Aesthetics/Quality of Life. The overall ratings for the factor Public Interest/Aesthetics/Quality of Life were *high* for N1 and *medium* for N2 (*high* being most desirable for the public). The measure Recreation rated N1 as *high* and N2 as *medium* because of greater access and land-based recreation associated with N1. The measure Sense of Community/Culture rated N1 as *high* and N2 as *low* since N2 would reduce/remove communities. The measure Safety from Blasting rated N1 as *low* and N2 as *high* because of their respective allowances for population in the C-9 area. The breakout group was unable to determine ratings for the measure Aesthetics.

Water Supply. The examination of Water Supply led to the ratings of *medium* for N1 and *high* for N2 (*high* being the most desirable for maintaining/improving water supply). Although N1 would allow for some backpumping, the N2 approach would give greater latitude where water could be placed, as determined under the measure Increase Future Water Supply. It would also provide a source of water that could maintain canal levels in dry times and improve water levels in the Well fields. N2 would Lessen Demand on the Regional System better than N1. No differences were identified for the measure maintain Existing Water Supply.

Flood Protection. N1 was rated *higher* than N2 regarding Flood Protection because of opportunities to improve flood protection associated with maintaining land uses other than mining (*high* indicating greatest level of flood protection). This would include a new secondary canal system and facilities for the N1 alternative. There was some concern about how this factor was rated because the N1 alternative enhances flood protection. No differences were identified for the measure Maintain Existing Flood Protection.

Management Flexibility. The Hydrology Factor Group noted that it was difficult for them to interpret this category, depending on whether short-term or long-term effects are to be considered. Both alternatives were rated at *medium* (*high* providing the most flexibility), but the group determined the N2 alternative was *marginally better* as related to water quality issues. It was noted that once mines are in place, there is reduced flexibility regarding what can be done in the area.

Existing Land Uses other than Mining. The N1 option was rated *high* and the N2 *low* with regard to Existing Land Uses other than Mining (*high* identifying the least amount of impact on land uses outside of mining, environment, and water supply). The N2 eliminates most of the other existing land uses because of the extensive mining that would occur in the area.

An initial review of the unweighted factors recommended the selection that maximized mining in the northern section (N2). As noted earlier, discussion regarding the results of the factor analysis indicated this choice was not necessarily the preferred one because of the amount of property that was not owned by miners in this area. Designating most of this area as approved for mining could have a significant effect on property values as well as the possible safety risks associated with blasting. This discussion of effects on property owners included the consideration of willing sellers.

Further discussion led the group to consider additional multiple land use designations for components of the Northern Section. The Issue Advisory Team was able to reach consensus on this alternative by designating most of the land currently owned for uses other than mining as "Suitable continue, but not preclude the sale of this land to mining companies on a willing seller basis. Mining was specifically not recommended for a half mile buffer adjacent to WCA-3B due to the high rate of seepage in this location. The northeast corner of the Northern Section was designated for water management, possibly a water for Rock Mining and Other Existing Uses". This would allow the existing, non-mining uses to treatment or storage area. This resulting map is presented in Figure 9.

Middle Section. The Middle Section had five alternatives: M1, M2, M3, M4, and M5. A summary of the results is presented in Table 3.

Water Quality. The factor speciality group evaluated the alternatives for water quality both onsite and offsite/regional. The effect on water quality in the Lake Belt (onsite) was rated *high* for

M2, M3, and M4. The on-site rating for M1 and M5 was *medium* + because in the southeast corner there is some land use that could reduce water quality. For the offsite/regional, all of the alternatives were rated *medium*, with M1 and M4 being rated slightly higher (*medium* +). It is recommended that the lakes not receive stormwater runoff from areas outside of the Lake Belt.

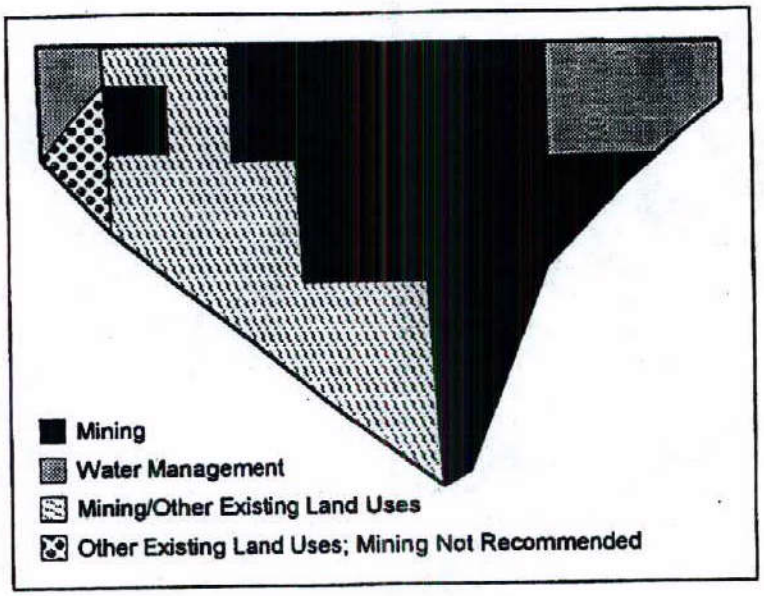


Figure 9. Recommended Alternative for Northern Section

The Issue Advisory Team as a whole had concerns regarding water quality for this section. It was commented that the design of the system should be for the inclusion of STAs. Every alternative has the opportunity for backpumping, and if there is backpumping, then there must be STAs. It was also commented that the Issue Advisory Team look at the region as a whole, and that there are the two other areas (Northern and Southern Sections) for STAs and wetlands.

TABLE 3
SUMMARY OF FACTOR ANALYSIS FOR MIDDLE SECTION*

Factor	M1	M2	M3	M4	M5
Water Quality (on/off site)	M(+)/M(+)	H/M	H/M	H/M(+)	M(+)/M
Quantity of Rock	L	H	M	L(-)	H(+)
Support Everglades Restoration	H	M	H(+)	H	M
Estuaries / Bays	H	H	H	H	H
Net Effects of Mining on Wetland	M(+)	M(-)	M	H	L
Economic Impacts	L(-)	H	M	L(-)	H(+)
Public Interest / QOL / Aesthetics	H	H	H	H	H
Water Supply	M	M	M	M	M
Flood Protection	M	M	M	M	M
Management Flexibility	H	M	H	H	M
Existing Land Uses Other than Mining	H	L	L	H	M

*L = low; M = medium; H = high

Quantity of Rock. Alternative M2 and M5 were rated *high* for quantity of rock, with M5 rated a *high* + because of the quantity of rock and its closeness to the railroad. M3 was rated *medium*, followed by M1 with a rating of *low* and M4 with a rating of *low* -. Again, for purposes of evaluation the quantities of rock are similar, but the distance to the railroad differs from one alternative to the next.

Support Everglades Restoration. Alternatives M1, M3, and M4 were rated *high* overall (with M3 rated slightly higher than M1 and M4) and M2 and M5 were rated *medium*. M2 and M5 rated lower for the measures Increase Spatial Extent and Enhance Connectivity. M4 was the only alternative that received a rating of *high* for all three measures Increase Spatial Extent, Enhancing Hydropatterns in WCA-3b and Everglades National Park, and Enhance Connectivity. All of the alternatives were rated *high* for Enhancing Hydropatterns in WCA-3b and Everglades National Park because all of the alternatives suggest pumps to control outflows.

Estuaries/Bays. All five alternatives received a rating of *high* regarding their effects on estuaries/bays. The reason that all of the alternatives are rated *high* is their handling of stormwater.

Net Effects of Mining on Wetland Functions. M4 was rated *high*, M1 *medium* +, M3 *medium*, M2 *medium* -, and M5 *low*. The alternatives with the greater wetlands areas were rated above those with less (i.e., M4 is the most preferred alternative for this criteria).

Economic Impacts. The ratings received by the alternatives ranged from a low - to a high +. Alternative M5 received a rating of *high* +, followed by M2 with a rating of *high*. M3 received a rating of *medium*, followed by M1 and M4 with a rating of *low* -. The key benefit is the sustainability of mining. An important economic consideration is the physical constraints as to what FP&L can do in this area, as well as legal issues and costs involved with this area. There is also the issue of easements in the area.

Public Interest/Aesthetics/Quality of Life. All of the alternatives received a *high* rating overall for the factor Public Interest/Aesthetics/Quality of Life. There is good recreation potential in all of the alternatives, with M1, M4, and M5 rated *high* + and M2 and M3 rated *high* for the measure Recreation. For the measure Safety from Blasting, all of the alternatives except for M1 received a *high* rating (M1 received a *medium* rating).

Water Supply. The overall rating for all the alternatives is *medium*. In addition to having the same overall rating, all the alternatives had the same rating for each of the three measures comprising Water Supply. The measure ratings were *medium* for Increase Future Water Supply and Lessen Demand on Regional System, and *high* for maintain Existing Water Supply.

Flood Protection. All the alternatives were rated *medium* regarding Flood Protection. All of the alternatives have potential to recover backpumped water.

Management Flexibility. Alternatives M1, M3, and M4 were rated *high*, and M2 and M5 were rated *medium*. The reason for the difference is that those areas with lakes are less flexible than those areas without lakes.

Existing Land Uses other than Mining. Alternatives M1 and M4 received a *high* rating with regards to Existing Land Uses other than Mining. M5 was rated *medium*, while M2 and M3 were rated *low*. All of the alternatives could accept the existing uses because there is enough property. The alternatives with no mining in the well fields were ranked higher.

Discussion of the factor analysis results for the Middle Section did not lead to an initial recommended alternative or set of alternatives. M3 was seen as a potentially viable alternative, but there was great uncertainty associated with what water storage areas would be needed for the Restudy and how much of a buffer would be needed to address seepage for the Pennsuco. These questions led the Issue Advisory Team to identify a "Bright Line" that needed to be drawn in the FP&L strip that would provide a comfort level for making a complete recommendation to the Working Group. During the last meeting of the Issue Advisory Team, members of the Restudy Team indicated that approximately 2800 acres of land would be needed for water storage.

Further discussion led to the proposal of dividing the FP&L strip in half with a set of conditions regarding mining. The wording of this proposal is

> *Issue a permit for mining in the eastern half of the FP&L strip, exclusive of the buffer and consistent with the Lake Belt report, with a condition that no mining occur for three years in the southern seven miles of the eastern strip and five years for the remaining area in the north (with the exception of previously permitted areas for the eastern strip). Permits issued for identified parts of the eastern half of the FP&L strip must include any appropriate mitigation for habitat and hydrologic impacts. Mining will be allowable in five years in the western half of the FP&L strip unless all or a portion is demonstrated to be required for Everglades restoration. No permits will be issued for the western half of the FP&L strip at this time.*

The Issue Advisory Team, excepting a minority, endorsed this recommendation for the Middle Section of the Lake Belt. Those endorsing this alternative did so to allow mining to proceed in portions of the eastern half of the FP&L strip before urban encroachment precluded all mining and to allow land swaps to proceed to consolidate public ownership in the Pennsuco and miner ownership east of the Pennsuco. The group agreed to recognize the concerns of those opposed to this recommendation, which were: (1) uncertainty of the Restudy to be able to generate the needed hydrologic information in the time limits set in the proposal and (2) the need for more technical data to make a decision. The alternative that was accepted by a majority of the Issue Advisory Team members is presented in Figure 10.

Southern Section. The four alternatives for the southern section are S1, S2, S3, and S4. A summary of the ratings for the southern section are presented in Table 4.

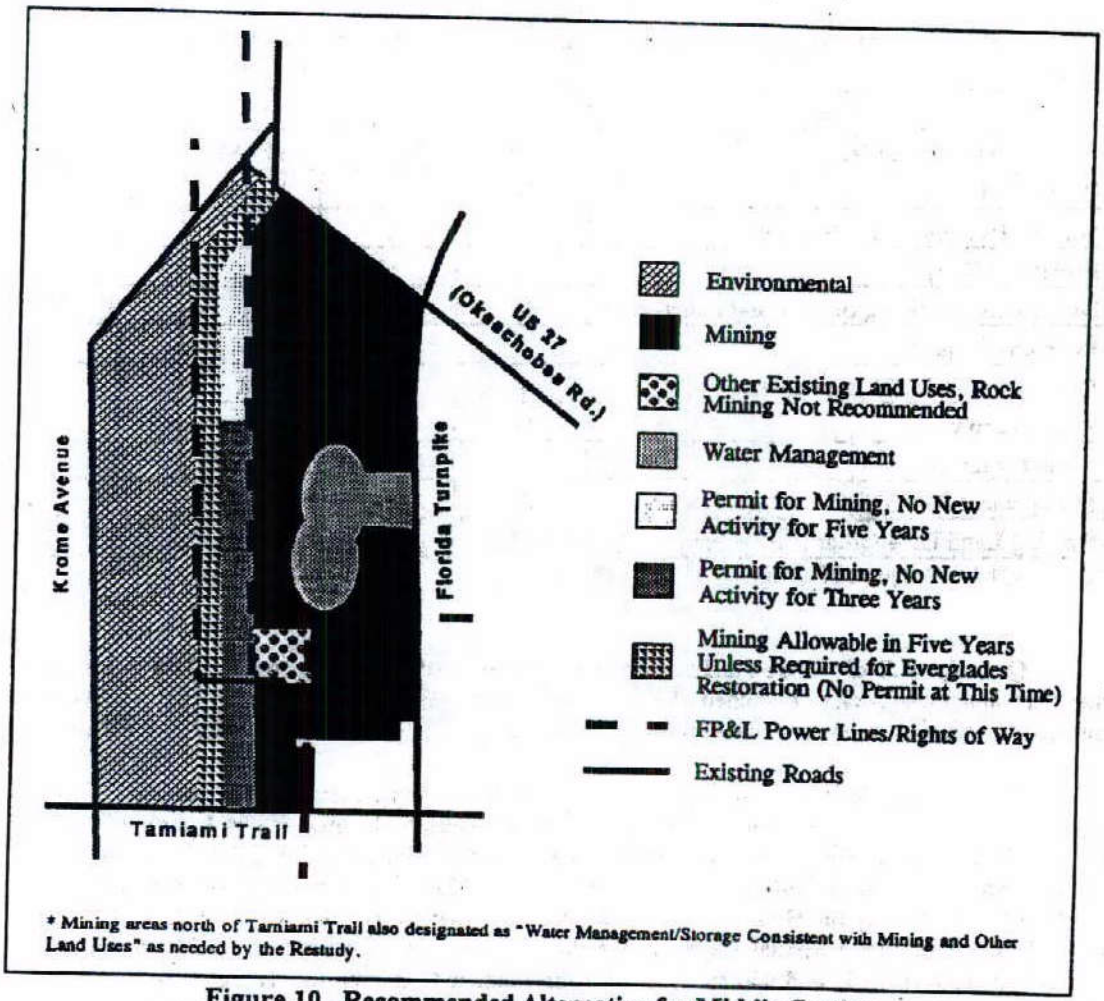


Figure 10. Recommended Alternative for Middle Section

Water Quality. Water quality consists of two components: drinking water standards, and surface water standards. The factor speciality group evaluated the alternatives for water quality both on-site and off-site/regional. The alternative S1 would have a *low* effect and S2 would have a *medium* effect on-site. S2 is somewhat better than S1 because there is a buffer between the park and the lakes, and a buffer between the prison and the lakes. Alternatives S3 and S4 would both have a *high* effect. The reason that S3 is ranked higher than S2 is that there are more wetlands left with S3. The evaluation for the off-site effects indicate S1, S2, and S3 as having *medium* effects, and S4 a *high* effect. The group noted that there was no agreement that there was significant difference between S1 and S2. For both on- and off-site effects, the S4 alternative was the most preferred, followed by S3, S2, and S1.

TABLE 4
SUMMARY OF FACTOR ANALYSIS FOR SOUTHERN SECTION*

Factor	S1	S2	S3	S4
Water Quality (on/off site)	L / M	M / M	H / M	H / H
Quantity of Rock	H	H	L	L (-)
Support Everglades Restoration	L	L	H	H
Estuaries / Bays	M	M	L	L
Net Effects of Mining on Wetland Functions	M	M	H	H
Economic Impacts	H	H	M	L
Public Interest / QOL / Aesthetics	M	M	M	M
Water Supply	M	M	L	L
Flood Protection	M	M	L	M
Management Flexibility	L	L	M	H
Existing Land Uses Other than Mining	M	M	L	L

*L = low; M = medium; H = high

Quantity of Rock. The S1 and S2 alternatives were rated ***high*** because they allowed for the maximum amount of rock to be mined. S3 was rated *low* because there would only be 5-8 years of mining left. S4 was rated *very low* because it allowed no mining, expect for the Bird Drive Basin.

Support Everglades Restoration. The overall rating for Support Everglades Restoration was ***high*** for S3 and S4, and *low* for S1 and S2. S1 and S2 were both rated *low* in Increase Spatial Extent, Enhancing the Hydropatterns in WCA-3b and the Everglades National Park, and Enhance Connectivity. S3 was rated ***high*** for Increase Spatial Extent and Enhance Connectivity, and was rated ***medium*** for Enhancing the Hydropatterns in WCA-3b and the Everglades National Park. S4 was rated ***high*** for Increase Spatial Extent and Enhancing the Hydropatterns in WCA-3b and the Everglades National Park, and was rated ***medium*** for Enhance Connectivity. If there was mining in the Bird Drive Basin for S4, then the overall rating would decline to ***medium*** because the rating for Increase Spatial Extent would fall to a rating of *low*.

Estuaries/Bays. Both S1 and S2 received ***medium*** ratings regarding their effects on estuaries/bays, as these alternatives allow for backpumping. Alternatives S3 and S4 received a *low* rating.

Net Effects of Mining on Wetland Functions. For the wetland functions of flood control attenuation and groundwater recharge, there is no significant difference between mining and wetlands. The function of fisheries habitat was rated ***high*** for S3 and S4, and was rated ***medium*** for S1 and S2. This is because there are more wetlands, therefore, more fish habitat for S3 and S4. The function of wildlife habitat was rated ***high*** for S3 and S4, and was rated ***medium*** for S1 and S2. The overall

rating of Net Effects of Mining on Wetland Functions (in order of preference) was *high* for S3 and S4, and *medium* for S1 and S2.

Economic Impacts. Three Economic Impacts were examined and used to rate the four alternatives. For the measure Minimize Acquisition Costs, S1 and S2 were rated *high*, and S3 and S4 were rated *low*. S3 is rated low because of limited mining and land acquisition is required, plus there are issues dealing with CSX (the railroad). S4 was rated low because of the CSX issues, all non-mining areas must be acquired, and mining and processing plant relocation. For the measure Minimize Flood Protection Needs, S1, S2, and S4 were all rated *medium*, while S3 was rated *high*. S3 was rated higher than the other three because it has the lowest cost. For the measure Effects on the Florida Economy, S1 is rated *high* + and S2 is rated *high*, with both alternatives providing the maximum amount of rock for the lowest cost. S3 and S4 are rated *low* because S3 reduces the amount of mining and S4 has infrastructure costs associated with it. The overall Economic Impacts are *high* for S1 and S2, *medium* for S3, and *low* for S4.

Public Interest/Aesthetics/Quality of Life. All four alternatives were rated as *medium*, but there were differences noted between the alternatives. For example, under S1 and S2 there would be large lakes which are of public interest, however, others like to see the Everglades as they drive down Krone Avenue instead of the lakes.

Water Supply. The overall rating for Water Supply was *medium* for S1 and S2, and *low* for S3 and S4. S1 and S2 were rated *medium* for the measures Increase Future Water Supply, Lessen Demand on Regional System, and Meeting Existing Water Supply, while S3 and S4 were rated *low* for these same measures. S1 and S2 were rated above S3 and S4 because of the ability to store water in the Bird Drive Basin.

Flood Protection. Alternatives S1, S2, and S4 were rated *medium* regarding Flood Protection, while the alternative S3 was rated *low*. There is some flexibility to store water if mining occurs in the Bird Drive Basin.

Management Flexibility. Alternative S4 was rated *high*, followed by S3 with a *medium* rating, and S1 and S2 with a *low* rating.

Existing Land Uses other than Mining. Alternatives S1 and S2 were rated *medium* and higher than S3 and S4, which were rated *low*. It was stated that in S1 and S2 there is no dislodging of current uses, except for the Bird Drive Basin.

Discussion of the factor analysis results for the Southern Section led to the suggestion of two alternatives for further consideration, S2 and S3. The primary concern for this section was the establishment of an appropriate buffer width to address seepage and water quality from Everglades National Park. A proposal was made by landowners in the Foreman Strip to delay mining on a portion of the land 2000 feet from the L-31N canal. This area contains some lands that are permitted for mining, and these would be set aside for five years for the Restudy to determine what width would be needed to address seepage. In exchange, lands to the east of the buffer would be permitted for mining. A preliminary model developed for the Southern Section at the request of the Issue Advisory

Team indicated that mining 2000 feet beyond the L-31N canal would not significantly increase seepage.

The Issue Advisory Team was unable to come to consensus on this issue. Several members were not comfortable with the modeling results because of the value used for the conductivity variable. Although the variable came from a U.S. Geological Survey report on the area, it was thought that conductivity may have been too high in the model. If the results are incorrect, it could have a significant impact on the multi-million dollar restoration projects taking place in Everglades National Park. Additionally, there were concerns that structural solutions may not be the correct solution for the area. In both cases, those with concerns about the proposed alternative felt they could not determine where a line for a buffer should be drawn without additional technical data.

The Issue Advisory Team was able to identify the areas of agreement presented in Figure 11. Extensive discussion on a possible alternative was inconclusive for the Foreman Strip. One option discussed was to exchange land permitted for mining that was near Everglades National Park for land further away in the area referred to as the "compromise zone." However, several members could not agree to this due to uncertainty of impacts. There was a majority in support of the proposed alternative for this section (specifically the Foreman Strip), but unlike the Middle Section, there were more members expressing concerns about potential seepage and other associated problems. Therefore, a portion of the Southern Section was left unassigned.

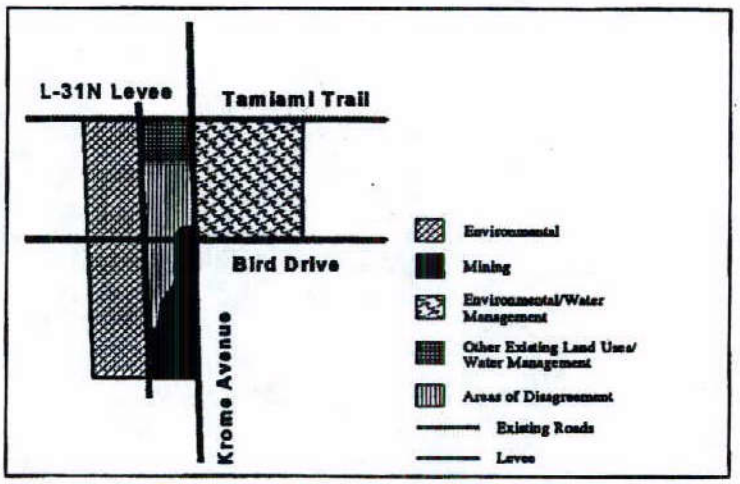


Figure 11. Recommended Alternative for Southern Section

What are the conclusions?

Following extensive discussion and conclusions on the North, Middle, and Southern sectional alternatives, the three were combined into one map for the consideration of the Issue Advisory Team. Participants were asked to check the map for accuracy and determine if there were any adjustments to be made when the three sections were combined as the recommended alternative. The assessment was done section by section as presented below.

Northern Section. Participants cited initial concerns about the western corner that touches the Middle Section. Extensive discussion ensued regarding whether or not the western section designated "Existing Land Uses, Mining Not Recommended" should be set aside for environmental purposes. Some of the land is targeted for acquisition, but not enough to make all of the participants comfortable. There were also reminders that the area in question has been examined extensively from a hydrologic perspective when the Northern Section was first discussed. The group left the Northern Section represented as originally drawn.

Middle Section. Discussion on the viability of a wildlife corridor from the Pennsuco to the wellfield led to its removal from the alternative map. This was due, in part, to the limited role it would be able to play and the desire to not give easy access to the wellfield by animals, which could create water treatment issues.

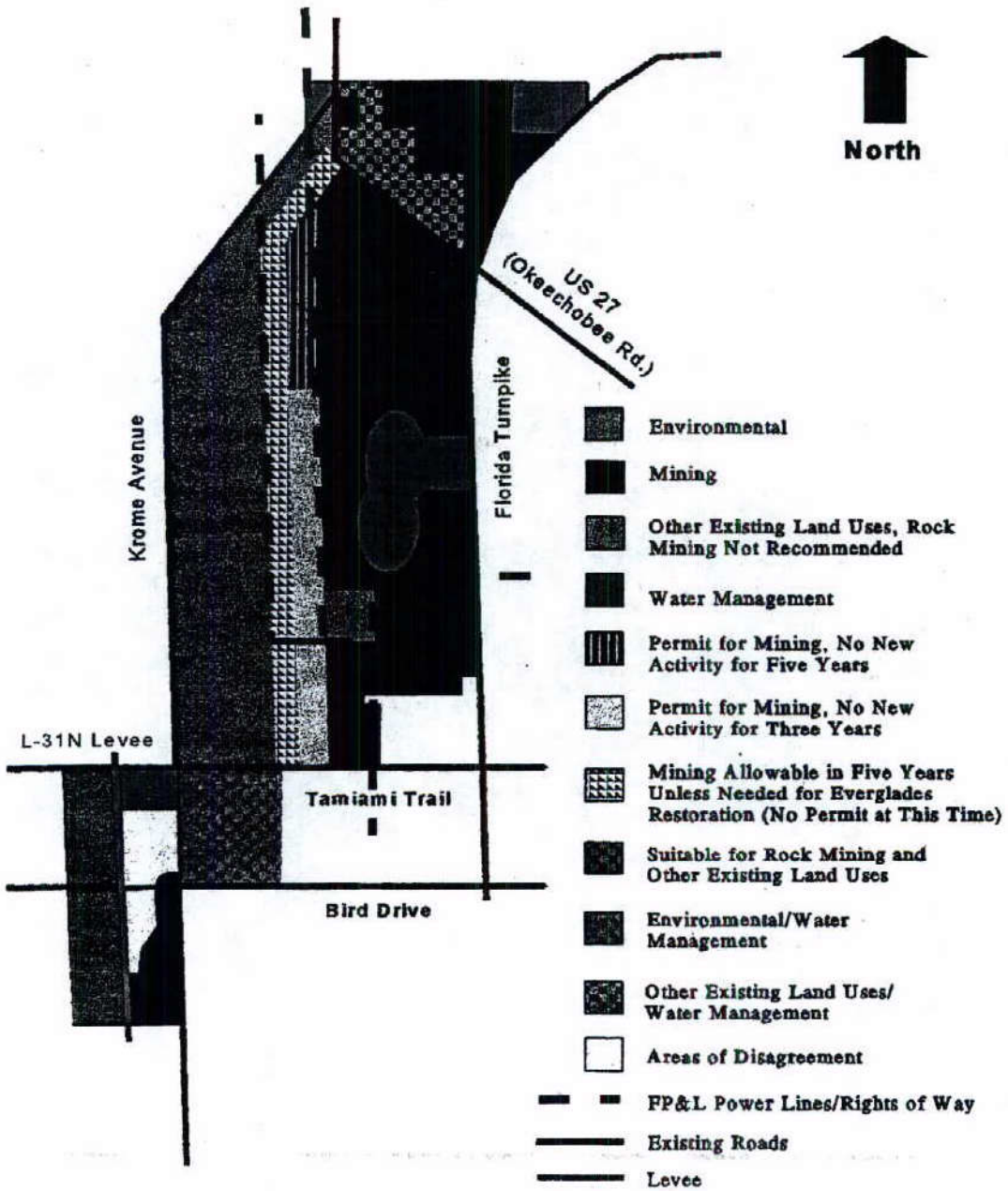
Participants noted the Restudy will need to establish water storage in both the Northern and Middle Sections. It was suggested that some of the mining areas in the these sections could be designated as "Water Storage Consistent With Mining". The Issue Advisory Team struggled in determining if land identified as "Suitable For Rock Mining And Other Existing Uses" in the Northern Section could be marked for additional water storage because of possible water quality issues. Eventually, the group agreed to designate the area as "Water Management/Storage Consistent With Mining And Other Land Uses". This designation will apply to any solid blue and cross-hatched blue areas in the Northern and Middle Sections. Noting these changes, the Issue Advisory Team accepted these revisions to the Middle Section.

Southern Section. Great concern was expressed about the accuracy of the designation of nonjurisdictional areas (uplands) in the Southern Section. It was thought that the map should not include a crescent shaped area that is currently permitted for mining due to its close proximity to the ENP boundary, and, therefore, was not included. Also, there was some discussion about how many lakes exist in the lower region of the Foreman Strip near Krome Avenue. Representatives from the Corps indicated they would examine the question of jurisdiction if they can gain access to the property. The Issue Advisory Team left the Southern Section as originally drawn.

Following these discussions of the Lake Belt Sections, the Issue Advisory Team unanimously accepted the mapped alternative for consideration by the Working Group. The map presented in Figure 12 represents the Issue Advisory Team's recommendation to the Working Group.

What are the benefits of the selected alternative for those affected by it?

The Issue Advisory Team was brought together to put forth a recommendation for consideration by the Working Group. By working together, Issue Advisory Team members could attempt to develop an alternative that would accommodate the wants and concerns of those who have a stake in what is recommended. In this way, each stakeholder could benefit from the alternative created for the Lake Belt area.



* Mining areas north of Tamiami Trail also designated as "Water Management/ Storage Consistent with Mining and Other Land Uses" as needed by the Restudy.

Figure 12. Consensus Lake Belt Alternative

A primary benefit this recommendation provides is a general certainty of the land uses for the area. This certainty will establish an existing condition from which the Restudy effort can develop their plans for the restoration of the environment in South Florida. It also allows agencies and miners to identify where permits can be issued based on the determination of the Issue Advisory Team.

A second benefit this recommendation provides is a means for maintaining the ecological integrity of the Pennsuco and the Everglades. Land swaps have been suggested which will exchange existing lands owned by miners and transfer them to the state in exchange for lands to mine further to the east. Additionally, the Issue Advisory Team's examination of the Lake Belt was strongly influenced by the need to address seepage and water quality issues in the region. This is best illustrated by the extensive discussions regarding an appropriate buffer size for the Middle and Southern Sections of the Lake Belt. The Issue Advisory Team has, to the best of its ability, attempted to address these issues for ensuring that ecosystem restoration efforts will be a success.

Rock miners are able to benefit from this recommendation through the identification of lands that can be mined. This provides the miners a means of assurance for their investors that mining will continue in the area and that improvements can be made to their facilities. It also makes the process of securing permits for these areas more efficient, since the locations were established by the Issue Advisory Team. Similar to the rock miners, benefits also exist for other landowners in that their properties will remain in their current state, whether it be a ranch, home, cemetery, or a nursery.

Benefits also exist for the people of South Florida. As mentioned earlier, water quality was a significant issue in the development of the recommended alternative. In addition to the buffer zones established for maintaining ecosystem integrity, buffer zones were designated around water wellfields to maintain drinking water quality. Also, the establishment of mining areas in the region provides a local source of rock and concrete for construction, which supports the development of infrastructure and the economy for the state of Florida.

Were there any caveats and/or minority opinions?

The process followed by the Issue Advisory Team was designed to incorporate the concerns of each member in reaching a consensus-based alternative. If a member was apprehensive about a particular topic or alternative based on their professional judgement, the group attempted to address that concern to that member's satisfaction. However, there were some occasions where the Issue Advisory Team was unable to incorporate a member's concern. Some of these concerns were addressed by listing them as suggestions for further analysis by the Working Group (presented later). Those concerns that could not be resolved on the basis of additional analysis are included in this section to be noted as part of the official record.

- Unanimous consensus was not reached for the Middle and Southern Sections in this process. The members who could not come to agreement on designated land uses expressed difficulty in accepting any size of buffer strip in these sections without better technical data. For

example, members who would not settle on allowing mining 2000 feet from the boundary of Everglades National Park wanted additional technical information before making a decision.

- Some Issue Advisory Team members were displeased with the inability of the Issue Advisory Team to reach consensus, even though the group recognized at the beginning that they would have to make decisions without the support of extensive modeling and other technical information.

- Several members expressed concern that all of the goals of the Issue Advisory Team (listed on pages 2 and 3 of this report) were not fully addressed during this series of meetings. In the opinion of some members, these goals were not considered in the examination of alternatives for the developed plan.

- Another concern of some Issue Advisory Team members was the subjectivity of the factor analysis of the alternatives. These members would like the Working Group to conduct a closer examination of the factor analysis.

- There were concerns that the rights of small property owners were not fully addressed. Although some strides were made to balance the needs of small property owners within the Lake Belt, some felt that the Issue Advisory Team's treatment was incomplete in two areas: (1) the need to identify lands that will not be needed for rock mining or restoration purposes, and (2) the need to address mitigation for small landowners as part of the Lake Belt Mitigation Plan Tasks for legislation. (See #17 and #28 in the bibliography in Attachment A.)

What suggestions for further analysis were offered by the Issue Advisory Team?

Although the Issue Advisory Team was able to address most of the issues in the development of the recommended alternative, there was not enough time to explore them all thoroughly. For example, the rapid schedule that was followed did not allow for a development of specific engineering features for the recommended alternative. This section presents the issues that require further consideration by the Working Group.

Demonstration Project for Seepage Barriers. One significant challenge in developing this alternative was using professional judgement to determine the effectiveness of seepage barriers for preventing/reducing seepage in the Lake Belt area. There was great uncertainty in determining how well this engineering feature would perform in the area and what the construction cost per mile would be. It was suggested that a demonstration project be conducted in the study area that utilizes a seepage barrier, most likely in the southern section of the study area. Only if realistic data on cost and performance of a seepage barrier becomes available can this technology be used in the project area.

Treatment of Private Property Owners. The purpose of the Issue Advisory Team identified the need to balance public need for mining activities with restoration goals for the Everglades, regional water management goals, and achieving no net loss of wetland functions. However, private property owners (other than miners) were not readily addressed in this purpose statement. The Issue Advisory Team struggled to determine how they were to consider private property issues in this process. The Advisory Team agreed to include consideration of the rights of private property owners during the development of this alternative for the Lake Belt area. However, the Issue Advisory Team also wanted the Working Group to consider further examination of the effects of this recommended alternative on private property owners.

Address FP&L Transmission Lines and Rights-of-Way Compatibility Issues. Florida Power & Light Company, Inc. (FP&L) owns in fee title or holds easements over all land within the Andytown-Levee and Levee-Midway electrical transmission line rights-of-way, which generally follow the section lines that form the eastern and western boundaries of the area defined by the agencies as the "FP&L Strip" in the Lake Belt Area. The fee title and easement rights FP&L owns within these rights-of-way must be addressed as land use decisions are made that may affect these transmission lines and rights-of-way. The Working Group and other entities are urged to contact FP&L in the early stages of planning or designating land uses within the Lake Belt that may affect these transmission lines or rights-of-way, so that any potential compatibility issues between the proposed land uses and FP&L's transmission lines and rights-of-way may be identified and resolved as early as possible. (See Bibliography Items #31 and #35 for further information on this issue.)

Consideration of Bird Rookeries. One concern that surfaced at the last meeting of the Issue Advisory Team was the treatment of several bird rookeries that were identified in the Lake Belt area. This information was not surfaced until the very end, so it was not a part of the development of the plan for the Lake Belt. The Working Group should consider this information (listed as #37 in the Bibliography in Attachment A) in their future decisions.

Increase in Rock Mining Tonnage Within the Existing Mined Area. The Issue Advisory Team generally discussed the removal of roads, zoned and platted, in the recommended mining areas where possible to increase mining efficiency and recovery of limestone. The practicality of recovering limestone from the bottom of older shallow pits was not addressed. The Working Group should include this issue as a topic for future discussions.

Urban Encroachment. There was discussion of the need to mine those areas subject to urban encroachment as soon as possible in order to prevent land use conflicts between residential development and mining impacts such as blasting, noise, and dust. The Working Group may want to consider encouraging local and state government to address some of these concerns such as the elimination of unnecessary road, canal and other reservations together with revision of land use and zoning codes to facilitate limestone mining in the recommended areas.

Examination of Mitigation Issues. One of the seven points of guidance given to the Issue Advisory Team by the Working Group was to address compensatory mitigation for wetlands affected by mining. There were some sidebar discussions regarding appropriate mitigation values and actions, but none that included the entire Issue Advisory Team. The Issue Advisory Team received a

presentation of mitigation issues to be considered for legislation by the state. Following several revisions, the group put forth the Lake Belt Mitigation Plan Tasks, listed as #36 in the Bibliography in Appendix A of this report. The seven tasks listed are (1) reach consensus on mitigation ratio for Pennsuco; (2) quantify available mitigation in Pennsuco; (3) identify hydrologic impacts requiring mitigation; (4) identify additional mitigation actions and areas, if needed; (5) hand swap proposals; (6) post-mining landscape; and (7) translate applicable mitigation requirements into fee/ton.

What are the recommendations?

The efforts of the Issue Advisory Team led to the development of an alternative in the form of the land use map presented in Figure 11 and suggestions for further analysis. It is the recommendation of the Issue Advisory Team that this alternative be carried forth to the Working Group for their consideration. Additionally, this alternative should be used in future planning and regulatory actions, including the CS&F Restudy and the PEIS.

It is the recommendation of this Issue Advisory Team that the Working Group strongly consider the suggested areas for further analysis. This type of information would be critical to adding any more detail to the alternative. Also, it was recognized that modeling activities throughout the Lake Belt are being conducted for other initiatives. Any new information from these activities should be factored into the alternative.

The Issue Advisory Team made progress. It some cases it was incremental, but it was significant. There was a sincere recognition by the Issue Advisory Team members of the importance of working together in managing the Lake Belt region. Nearly everyone indicated that the time used in this activity was well spent and it moved the region closer to a proper balance of objectives. As empirical information comes available the members of this Issue Advisory Team could again work together in getting to the next level of detail. Therefore, it is the recommendation of this Issue Advisory Team that communication among the members continue and that at appropriate junctures of future plan development and implementation, the Issue Advisory Team be accessed for input and guidance.

Attachment A: Bibliography

BIBLIOGRAPHY OF INFORMATION MADE AVAILABLE TO THE LAKE BELT ADVISORY TEAM (IN ORDER OF DISTRIBUTION)

(1) Meeting Agenda #1 for January 29, 1997 meeting provided by PMCL
(2) Meeting Notes from January 17, 1997 meeting provided by Bob Barron--Includes list of Advisory Team member wants
(3) List of Lumped Wants, done January 27, 1997 provided by Bob Barron and group
(4) Handouts from Jayantha Obeysekera and Tom MacVicar on modeling for eight previous alternatives for the Lake Belt, from January 29, 1997 meeting--Includes seepage information
(5) Map for meeting and hotel locations in Jacksonville and West Palm provided by USACE Jacksonville District
(6) Meeting Notes #1 for January 29, 1997 provided by PMCL
(7) Meeting Agenda #2 for February 14, 1997 meeting provided by PMCL
(8) Letter to Advisory Team from Pamela Stanton
(9) Water quality handout EIS for factor analysis provided by Eric Hughes
(10) Quantity of rock informational handout for factor analysis provided by Paul Larsen
(11) Packet of hydrologic and environmental information for factor analysis provided by Tommy Strowd and group
(12) Proposed rockmining status map provided by Jim Jackson
(13) Lake Belt GIS map provided by Jim Jackson--This map was used by the Advisory Team in the creation of alternatives
(14) Meeting Notes #2 for February 14, 1997 provided by PMCL
(15) Meeting Agenda #3 for February 27-28, 1997 provided by PMCL
(16) Overheads of presentation by Tim Feather--Meeting #3
(17) Letter to Advisory Team from Alberto Tamayo--#1
(18) Information from discussion on Evaluation Criteria for the factor areas Water Supply, Flood Control, and Management Flexibility
(19) Lake Belt GIS map designating areas of agreement on land use provided by PMCL
(20) Alternative Summary Template provided by PMCL
(21) Existing lakes map from April 1996 provided by Paul Larsen
(22) Information pertaining to Evaluation Criteria for the factor area Public Interest/ Aesthetics/Quality of Life provided by Henry Bittaker
(23) Meeting Agenda #4 for March 13-14, 1997 provided by PMCL
(24) Meeting Notes #3 for February 27-28, 1997 provided by PMCL
(25) Alternative regional maps provided by Jim Jackson--These maps represent the alternatives being considered for each section.
(26) Overheads of presentation by Tim Feather--Meeting #4
(27) Maps of FP&L power lines in the Lake Belt
(28) Letter to the Advisory Team from Alberto Tamayo--#2
(29) Letter to the Advisory Team from Mark Kraus
(30) Information provided by the Everglades National Park
(31) Letter to the Advisory Team from Cathy Sellers
(32) Meeting Notes #4 for March 13-14, 1997 provided by PMCL
(33) Overheads of presentation by Tim Feather--Meeting #5
(34) Southern Section Modeling Results from Tom MacVicar
(35) Letter to the Advisory Team from Cathy Sellers--#2
(36) Lake Belt Mitigation Plan Tasks from Janet Llewellyn
(37) Northwest Dade County Freshwater Lake Belt Plan report from Jim Jackson
(38) Letters and Maps from Joan Browder
(39) Meeting Notes #5 for April 24, 25, 1997 provided by PMCL

Attachment B: List of Attendees

LIST OF ATTENDEES LAKE BELT WORKING GROUP ISSUE ADVISORY TEAM MEETINGS	
NAME	**AFFILIATION**
MEMBERS	
Bob Barron	U.S. Army Corps of Engineers
Frank Bernardino	Metro-Dade County DERM
Henry F. Bittaker	Department of Community Affairs
Joan Browder	NOAA, National Marine Fisheries Services
Michael Choate	U.S. Army Corps of Engineers
John R. Hall	U.S. Army Corps of Engineers
Eric Hughes	U.S. Environmental Protection Agency
Jim Hurley	White Rock Quarries
Jim Jackson	South Florida Water Management District
Mark L. Kraus	National Audubon Society
Paul W. Larsen	Larsen & Associates
Janet Llewellyn	Florida Department of Environmental Protection
Thomas K. MacVicar	MacVicar, Federico & Lamb, Inc.
Jayantha Obeysekera	South Florida Water Management District
Robert O'Brien	Florida Rock Industries
William J. Payne	Rinker Materials Corporation
Joseph E. Podgor	Environmental Information Services
William Porter	U.S. Army Corps of Engineers
Russell Reed	U.S. Army Corps of Engineers
Karsten A. Rist	Florida Audubon Society
Susan Ritter	Everglades National Park
Jorge S. Rodriguez	Miami-Dade Water and Sewer Department

LIST OF ATTENDEES LAKE BELT WORKING GROUP ISSUE ADVISORY TEAM MEETINGS	
NAME	**AFFILIATION**
Melanie Steinkamp	U.S. Fish and Wildlife Service
Tommy Strowd	South Florida Water Management District
Steve Sutterfield	U.S. Army Corps of Engineers
Alberto Tamayo	Krome & Okeechobee Property Owners
Al Townsend	Tarmac Florida, Inc.

LIST OF ATTENDEES LAKE BELT WORKING GROUP ISSUE ADVISORY TEAM MEETINGS	
NAME	**AFFILIATION**
NON-MEMBERS	
Sue Alspach	Metro-Dade County DERM
Stu Appelbaum	U.S. Army Corps of Engineers
Scott Benyon	Rinker Materials Corporation
Doug Bruce	Carlton Fields
John Cerasari	Kimley-Hord & Associates
Jack Corkill	
Chris Cooke	Florida Power and Light
Susan Coughanour	South Florida Water Management District
Jeremy Craft	Florida Department of Environmental Protection
John Devine	Steel Hector & Davis
Dante B. Fascell	Holland & Knight
Jean Evoy	Dade Evoy
Bertha Goldenberg	Miami-Dade Water & Sewer Department
Richard Harvey	U.S. Environmental Protection Agency
Aaron Higer	U.S. Geological Survey
Craig Johnson	U.S. Fish and Wildlife Service
Robert Johnson	Everglades national Park
Kevin Kotun	Metro-Dade County DERM
Alan MacVicar	Rinker Materials Corp
Bill Murphy	Kendall Properties & Investments
Marlen Oria	Florida Power and Light
Richard O'Rourke	Miami-Dade Water and Sewer Department
Jack Peeples	South Florida Limestone Mining Coalition
Robert L. Rhodes	Holland & Knight
Thom Robinson	U.S. Army Corps of Engineers
Cathy Sellers	Steel Hector & Davis

LIST OF ATTENDEES LAKE BELT WORKING GROUP ISSUE ADVISORY TEAM MEETINGS	
NAME	**AFFILIATION**
Pamela Stanton	
Thomas Van Lent	Everglades National Park
SUPPORT TEAM	
Timothy Feather	Planning and Management Consultants, Ltd.
Dale Brown	Planning and Management Consultants, Ltd.
Don Capan	Planning and Management Consultants, Ltd.
Don Hayes	Planning and Management Consultants, Ltd.